UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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			EXAMINER
2512	7590	07/28/2004	MOORE, IAN N

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ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/779,979	KALLIOKULJU ET AL.
	Examiner	Art Unit
	Ian N Moore	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,7-11 and 15-17_ is/are rejected.

7)☒ Claim(s) _3-6 and 12-14_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _6,7_.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 4-23-01 (paper number# 6) and 6-

    14-01 (paper number 7) are in compliance with the provisions of 37 CFR 1.97. Accordingly,

    the information disclosure statement is being considered by the examiner. However, IDS

    submitted on **2-9-01 (paper number# 4)** is missing. Examiner is requesting the applicant to

    resubmit the missing IDS.

Drawings

2. The drawings are objected to because there is **a lack of descriptive legends** for **FIG. 5.**

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature

    of the invention specified in the claims. Therefore, the "**a counter**" (claim 1, line 9; and

    claim 10, line 14) must be shown or the feature(s) canceled from the claim(s). No new

    matter should be entered.

    Corrected drawing sheets are required in reply to the Office action to avoid abandonment of

    the application. Any amended replacement drawing sheet should include all of the figures

    appearing on the immediate prior version of the sheet, even if only one figure is being

    amended. The figure or figure number of an amended drawing should not be labeled as

    "amended." If a drawing figure is to be canceled, the appropriate figure must be removed

    from the replacement sheet, and where necessary, the remaining figures must be renumbered

    and appropriate changes made to the brief description of the several views of the drawings

    for consistency. Additional replacement sheets may be necessary to show the renumbering

    of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet"

in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing

figures. If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative

of the invention to which the claims are directed.

The following title is suggested: **Data Packet numbering in mobile packet-**

switched data transmission.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1,7, 9,10,15 and 17 are rejected under 35 U.S.C. 102(a) as being anticipated by 3GTS

25.323 of 3GPP (refers to as 3GPP'323 from hereon).

Regarding claims 1 and 10, 3GPP'323 discloses a packet-switched

telecommunications system which comprises a terminal (**see FIG. 2, Originator (i.e. UE or**

RNC), see page 5, section 1, paragraph 2) and a fixed network (**see page 6, section 4.1,**

paragraph 1; UTRAN, UMTS Terrestrial Radio Access Network), which comprises a

network element (**see FIG. 2, Receiver (i.e. RNC or UE)**) supporting packet-switched data

transmission (**see page 7, section 5, paragraphs 1-2; IP data streams**), data packets being

arranged to be sent between the terminal and the network element in the telecommunications

system (**note that IP packets are send between UE and RNC in UMTS system**) and the

telecommunications protocol of the telecommunications system comprising a convergence

protocol layer (**see FIG. 2, PDCP, Packet Data Convergence Protocol, and see FIG. 1,**

PDCP sublayer) for converting user data packets into convergence protocol packets (**see**

FIG. 2 and FIG. 1, user data is converts into PDCP packets; see page 7, section 5,

paragraphs 1-3; note that user data is received at PDCP and it encapsulated the PDCP

header into PDCP packets), and a link layer (**see FIG. 2, RLC, Radio Link Layer, and**

see FIG. 1, RLC) for transmitting convergence protocol packets as data units (**see page 7,**

section 5, paragraphs 1-3; PDCP packets are encapsulated at RLC layer a radio

packets) and for acknowledging the transmission (**see page 10, section 5.4.1, paragraphs 1-**

2; RLC acknowledgement), wherein in the transmission of data packets between the

terminal and the network element

a data packet number (**see page 7, section 5, paragraph 3, PDCP Service data unit**

(SDU) sequence number) is arranged to be defined for the convergence protocol packets to

be sent by means of a counter (**see FIG. 1, PDU numbering unit; see page 9, section 5.3,**

paragraphs 1-5; each PDCP SDU is numbered with a PDCP sequence number, the

sequence number values is initiated to zero at initialization and increased by one at each

PDCP PDU transmission. Thus, it is clear that PDU numbering unit is the counter,

which counts the each PDCP PDU upon transmission);

the convergence protocol packets to sent are arranged to be transmitted to the link

layer for transmission (**see FIG. 2 and FIG. 1, note that each PDCP PDU is transmitted**

towards RLC layer transmission; see page 7, section 5, paragraphs 1-3),

the data packet number is arranged to be defined for received convergence protocol

packets by the counter (**see FIG. 1, PDU numbering unit; see page 1, section 1; note that**

PDCP layer is incorporated in both UE and RNC, thus both originator (i.e. UE) and

receiver (i.e. RNC) process the packets in the same mannerAlso, see page 9, section 5.3,

paragraphs 1-5; each PDCP SDU is numbered with a PDCP sequence number, the

sequence number values is initiated to zero at initialization and its corresponding is

increased by one at each PDCP PDU reception. Thus, it is clear that PDU numbering

unit is the counter, which counts the each PDCP PDU upon reception)

received convergence protocol packets are arranged to be acknowledged (**see FIG. 2,**

acknowledgment; note that the RLC of the receiver node acknowledges the received

PDU packet and the acknowledgment is send back to RLC of the originator node; see

page 10, section 5.4.1, paragraphs 1-2).

Regarding claims 7 and 15, 3GPP'323 discloses wherein said telecommunications

system is a packet-switched mobile communication system, such as the UMTS or the GPRS

system (**see page 6, section 4.1, paragraph 1; UTRAN, a packet switched UMTS**

Terrestrial Radio Access Network), which utilizes acknowledged transmission (**see FIG. 2,**

acknowledgment).

Regarding claims 9 and 17, 3GPP'323 discloses wherein the method is applied in

handover between radio network subsystems in the UMTS (see page 11, section 5.5,

paragraphs 1-4; SRNS, Radio Network Subsystem relocation or handoff between old

SRNC and target SRNC in the UMTS).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6. Claim 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP'323 in

view of Taketsugu (U.S. 5,875,292).

Regarding claims 2 and 11, 3GPP'323 discloses wherein a user data packet is

received in the convergence protocol layer (see FIG. 1 and FIG. 2, PDCP layer) of the

transmitter (see FIG. 2, Originator; and FIG. 1; note that PDCP SDU (i.e. PDCP-

DATA.req) from the user is received at PDCP layer of the originator; see page 7,

section 5, paragraphs 1-3; page 10, section 5.4.1, paragraphs 1-2),

the user data packet is stored in a buffer (see page 7, section 5, lines 3; PDCP SDU

is stored the buffer) and a convergence protocol packet number (see page 7, section 5,

paragraph 3, PDCP Service data unit (SDU) sequence number) is defined for the user

data packet as the initial value of the transmitter's counter (see FIG. 1, PDU numbering unit

of the originator; see page 9, section 5.3, paragraphs 1-5; **each PDCP SDU is numbered**

with a PDCP sequence number, the sequence number values is initiated to zero);

the convergence protocol packet and the convergence protocol packet number linked

therewith are transferred to the link layer (**see FIG. 1, PDCP SDU and associated PDCP**

SDU number are forwarded to RLC layer below) and the value of the transmitter's

counter is added by one (**see page 9, section 5.3, paragraphs 1-5; the sequence number**

corresponding values is initiated to zero at initialization and increased by one in the

originator PDU numbering unit upon transmission),

the convergence protocol packet is transmitted from the transmitter's link layer (**see**

FIG. 2, Originator RLC layer) to the receiver's link layer (**see FIG. 2, Receiver RLC**

layer; note that PDU is sent from originator RLC to receiver RLC; see page 10, section

5.4.1, paragraphs 1-2,

the received convergence protocol packet is transferred from the receiver's link layer

(**see FIG. 2, receiver RLC layer**) to the convergence protocol layer (**see FIG. 2, Receiver**

PDCP layer; note that PDU is forwarded from RLC layer to PDCP layer in the

receiver) and the value of the receiver's counter is added by one (**see page 9, section 5.3,**

paragraphs 1-5; the sequence number corresponding values is initiated to zero at

initialization and increased by one in the receiver PDU numbering unit upon reception)

an acknowledgement of reception of the convergence protocol packet is transmitted

from the receiver's link layer to the transmitter's link layer (**see FIG. 2, acknowledgment;**

note that the receiver RLC layer acknowledges the received PDU, and the

acknowledgment is send back to originator RLC layer; see page 10, section 5.4.1,

paragraphs 1-2), and

the user data packet is removed from the buffer in response to transmitting the

acknowledgement of the reception of the convergence protocol packet to the transmitter's

convergence protocol layer (see FIG. 2, originator PDCP layer receiving acknowledgement

PDU (i.e. RLC-AM-DATA.cnf); **see page 10, section 5.4.1, lines 1-2; note that buffered**

PDCP-SDU is deleted when PDP-SDU is confirmed/acknowledge to be transmitted).

3GPP'323 does not explicitly disclose the packet is transmitted from the transmitter

without packet number to the receiver.

However, the above-mentioned claimed limitations are taught by Taketsugu'292. In

particular, Taketsugu'292 teaches a packet number is defined for the user data packet as the

initial value of the transmitter's counter (**see FIG. 1, operation controller 16 of the**

transmit site; FIG. 4, steps 30 and 31; see col. 4, lines 20-25; see col. 1, lines 60-64; note

that the serial number of the packet is initiated to 0 at the transmit site),

the packet and the packet number linked therewith and the value of the transmitter's

counter is added by one (**see FIG. 4, steps 32 and 34; see col. 4, lines 25-36; note that the**

packet and serial number are associated and the serial number is incremented by one

upon transmission);

the packet is transmitted from the transmitter without the packet number to the

receiver (**Abstract, see col. 1, lines 55-59; col. 4, lines 13-16; a packet is transmitted from**

a transmit site to receive site without containing serial numbers of the data packet);

the received packet is transferred from the receiver (**see FIG. 5, Receive site**) and the

value of the receiver's counter is added by one (**see FIG. 5, steps 40,41,42,46; see col. 4,**

lines 55 to col. 5, lines 5; note that the packet the serial number is incremented by one

upon reception).

In view of this, having the system of 3GPP'323 and then given the teaching of

Widegren'112, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to modify the system of 3GPP'323, for the purpose of sending

packets without a serial number, as taught by Widegren'112, since Widegren'112 states the

advantages/benefits at col. 1, lines 35-55 that it would provide a high throughput over low-

speed communications links by not transmitting serial numbers. The motivation being that by

reducing amount of housekeeping data such as serial number in the header, it can increase the

throughput and reduce the packet retransmission.

7.   Claim 8 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP'323 in

view of Widegren (U.S. 6,374,112).

Regarding claim 8 and 16, 3GPP'323 discloses wherein the method as described

above in claim 1 and 10.

3GPP'323 does not explicitly discloses handover (**see Widegren'112 col. 12, lines**

32-65; handoffs) between the UMTS (**see Widegren'112 FIG. 1, UMTS 24**) and the GPRS

(**see Widegren'112 FIG. 1, GPRS 20 within Core network 16; note that MS 30 is**

handoff between GPRS network BS 23 to UMTS network BS 28; Widegren'112 col. 5,

line 40-55).

However, the above-mentioned claimed limitations are taught by Widegren'112. In view of this, having the system of 3GPP'323 and then given the teaching of Widegren'112, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of 3GPP'323, for the purpose of providing a handoff between GPRS and UMTS, as taught by Widegren'112, since Widegren'112 states the advantages/benefits at col. 1, lines 10-12, 12-13, 40-56 that it would provide flexibility communication between wide variety of mobile communication services and efficiently allocating resources. 3GPP'323 also discloses the PDCP method would provide functions that help to improve channel efficiency (see 3GPP'323 page 6, section 4.1, paragraphs 3). The motivation being that by providing a handoff between different generation systems, it can increase the service providers' capability to provide wide variety of services over various generation of network, and also utilizing PDCP method as proposed by 3GPP'323, would improve channel efficiency and reliability during handoff.

Allowable Subject Matter

8. Claims 3-6 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ian N Moore whose telephone number is 703-605-1531. The

examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ken Vanderpuye can be reached on 703-308-7828. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM
7/23/04

KENNETH VANDERPUYE
PRIMARY EXAMINER